NORTEL

Product Bulletin

Bulletin Number: P-2008-0032-Global
Date: 1 February 2008

UNIStim Firmware 0621C4P for IP Phone 2007, and 0623C4I, 0624C4I, 0625C4I and 0627C4I for IP Phone 1110, 1120E, 1140E and 1150E respectively

REVISION HISTORY

Date	Revision #	Summary of Changes
31-January-08	Original bulletin	This is the original publication
1-February-08	Revision 1	Add advisory concerning Auto-VLAN feature

Introduction

Nortel* is pleased to announce the availability of UNIStim firmware version **0621C4P** for the IP Phone 2007. In addition, Nortel is pleased to announce the availability of firmware version **0623C4I, 0624C4I**, **0625C4I** and **0627C4I** for the IP Phone 1110, IP Phone 1120E, IP Phone 1140E and IP Phone 1150E respectively.

These new firmware loads deliver enhancements to Nortel's IP Telephony Solution and deliver general quality improvements. The enhancements available include:

- IP Client registration to Application Gateway 1000 and Application Gateway 2000 release 6.2 via cookies

<u>Enhancements</u>

Application Gateway New Set Registration Model using Cookies (Applies to IP Phone 2007, 1110, 1120E, 1140E and 1150E)

Application Gateway releases prior to 6.2 obtained phone DN to IP mapping information from the Communication Server 1000 via a connection to the administrative console port. With firmware releases 0621C4P, 0624C4I, 0625C4I and 0627C4I the Application Gateway Release 6.2 can obtain the DN to IP mapping information, as well as other information, directly from the Nortel IP phones via a cookie. Support for the cookie feature requires that the Application Gateway and IP Phones be running in either a Communication Server 1000 Release 5 or greater environment, or a Communication Servers 2100 Release 10 environment. A major benefit of the cookie feature is the more effective transfer of phone specific data from the communication server to a connected Application Gateway via the respective IP Phone.

Quality Improvements

The 0621C4P, 0623C4I, 0624C4I, 0625C4I and 0627C4I firmware loads also continue to improve the overall quality of the IP Phone 2007 and Next Generation IP Phones (1110, 1120E, 1140E and 1150E) through the delivery of ongoing resolution of CRs and closed cases. In total, well over 100 quality improvements have been delivered, and 15 customer cases have been closed in these new firmware loads since the last suite of GA firmware loads. The list of closed cases since the last suite of generally available (GA) firmware loads are listed below.

The 0621C4P, 0623C4I, 0624C4I, 0625C4I and 0627C4I firmware releases close the following cases:

Case #	Title
070326-78016	Problems muting the phone when connected to a BCM400 4.0
070508-21232	Problems with LLDP interworking with Cisco VMPS
070531-45195 070924-56747	IP Phone beeps on audio stream upon receiving an unexpected codec request
070828-30816	Problems with DHCP when the IP phone is move from one voice VLAN ID to another
070412-96011	Sometime the DHCP release is not sent
071016-77594	Slight chance of dropped speech path after DHCP lease expires
070625-69613	Adjustments required to LLDP
070831-35338 070904-37118 071229-41337	Slight chance that IP call recording may fail
070223-46116	Backlight may not shut off
070522-35488	A feature key label can exceed the field width if it has many wide characters
070627-71567	Possible display concerns when scrolling within corporate directory
071005-68421	Certain ports susceptible to Port Scans

Product Advisements

Running Auto-VLAN on the IP Phones without the DHCP server offering VLAN information may result in the IP Phone becoming unresponsive. (Applies to IP Phone 2001, 2002, 2004, 2007, 1110, 1120E, 1140E, 1150E)

An issue was found with the Auto-VLAN feature in the IP Phones that could result in the IP Phone becoming unresponsive. If the IP Phone is provisioned for Auto-VLAN and the DHCP server does not provide VLAN configuration information, the IP Phone will attempt a connection to the call server with untagged packets (i.e. no VLAN). If the phone cannot establish connection to the call server, the phone will remain in an unresponsive state until manually reset.

It is therefore strongly recommended that if the phone is provisioned for Auto-VLAN that one ensures VLAN configuration information is provided in the VLAN-A option of the DHCP packet.

A fix for this issue is currently being implemented and will be available in the next UNIStim firmware release.

2-Step Upgrade May Be Required (Applies to IP Phone 1120E and 1140E)

One important note when upgrading the IP Phone 1120E to 0624C4I or the IP Phone 1140E to 0625C4I from any load previous to 0624C1B or 0625C1B respectively, is that a 2-step upgrade will be required. The IP Phone 1120E and 1140E cannot be upgraded directly to the newly released firmware if they are currently running firmware previous to 0624C1B and 0625C1B respectively. Instead, the phones must first be upgraded to 0624C1B and 0625C1B or newer (recommend 0624C3C and 0625C3C). Once the phones are running at least 0624C1B and 0625C1B firmware, they will accept being upgraded to 0624C4I and 0625C4I respectively.

Network Loop (Applies to IP Phone 2007, 1120E, 1140E)

These firmware releases include a fix to help prevent network loop scenarios from being introduced into the network, and the resultant network outages that can occur.   The network loop avoidance fix was first introduced in 0621C2B, 0624C1E and 0625C1E. One important note when upgrading to 0621C4P, 0624C4I or 0625C4I from any load previous to 0604D9H, 0621C2B, 0624C1E or 0625C1E respectively, is that IP Phones that were inadvertently mis-wired during initial installation will not be allowed to work until the cabling problem is corrected. This fix is only an issue if the installer, when installing the Nortel IP Phone 2007, 1120E or 1140E, inadvertently connected the network Ethernet cable to the PC Ethernet port on the back of the phone, instead of connecting it to the network Ethernet port on the back of the phone. IP Phones 2007 running firmware previous to 0621C2B and IP Phone

1120E and 1140E running firmware previous to 0624C1C and 0625C1C respectively will work when incorrectly connected, but this does introduce the potential for network degradation. These new firmware loads will try and safe guard the network by trying to prevent phones that are mis-cabled to function.   **This means that the IP Phones that are working on a previous release of firmware may stop working if they are not correctly wired.**

But realize that a mis-cabled phone may still work, even with the new firmware, if the network infrastructure supports Auto MDIX. If the network infrastructure supports Auto MDIX, network loop can still occur if the network is not running the Spanning Tree Protocol (STP) or a similar loop avoidance protocol.

As a preventative measure to reduce the potential for network degradation, and to prevent mis-cabled phones from ceasing to work when their firmware is upgraded, please consider taking the necessary steps to ensure your Nortel IP phones network cables are plugged into the correct ports on the back of the phone – network cable into the network Ethernet port, and the PC Ethernet cable (if connecting a PC) to the PC Ethernet port (little computer icon) on the back of the phone.

*Correction to VLAN Access Process (Applies to IP Phone 2007, 1120E, 1140E) – **may impact current network configurations***

The 0621C4P, 0624C4I and 0625C4I firmware releases continue to support the changes to the VLAN Access Process that were first introduced in 0621C2B, 0624C1E or 0625C1E firmware.

When upgrading to 0621C4P, 0624C4I or 0625C4I from any load previous to 0621C2B, 0624C1E or 0625C1E respectively, the corrections to the VLAN access process, might impact current customer network configurations, especially if something special was done to compensate for the former operation of the phone.

1) Voice VLAN enabled with the Automatic VLAN Discovery feature – initial DHCP request is forwarded based on the Data VLAN policy (i.e. untagged if Data VLAN is disabled or tagged with the Data VLAN ID if Data VLAN is enabled). Subsequent DHCP requests and the resolution of a Voice VLAN will be as per existing automatic operation.

The potential impact of this change to an installed customer network is:
- If they have a Data VLAN configured on the phone, and
- they have the auto configure VLAN feature enabled, and
- they DO NOT have their DHCP server on the Data VLAN

then the phone running these new firmware images will not register to the call server. Customers should check that the DHCP server is on the Data VLAN if they've configured a Data VLAN on their phones.

2) Stripping of egress Data VLAN tag is configurable – VLAN tag stripping can be enabled or disabled in addition to enabling VLAN support on the phone's PC port. If VLAN is enabled on the phone's PC port (ingress direction), the **default will be to strip** the tag on the egress direction. However, this can be manually overridden to disable stripping even if VLAN tagging (ingress direction) is enabled on the phone's PC port. Likewise if VLAN is disabled on the phone's PC port, the default will be to NOT to strip the tag on the egress direction. But this again can be overridden to enable stripping even if VLAN is disabled on the phone's PC port (ingress direction).

If stripping is disabled, the packet is sent to the phone's PC port unmodified. If stripping is enabled, the 802.1q header is removed (assuming one exists) from the packet before forwarding it out the phone's PC port

Important Note: While these changes corrects the VLAN access process, the change might impact current customer network configurations, especially if something special was done to handle the prior operation of the phone.

For more information on VLAN support in the IP Phones, please refer to the IP Phones Description, Installation and Operation Document, NTP 553-3001-368.

Outstanding Known Issues

Although the 0621C4P, 0623C4I, 0624C4I, 0625C4I and 0627C4I firmware releases greatly improve the overall quality of the IP Phones, these firmware releases still include some outstanding known issues:

Backlight Interaction with USB devices (IP Phone 2007, 1120E, 1140E and 1150E)

Some USB devices (i.e. Mice or Keyboards) send regular coordinate update messages to the phone even when the device is not being used. This can cause the sleep mode for the backlight to not be properly invoked.

Certain USB Mice do not work with IP Phone 2007 (IP Phone 2007only)

It has been discovered that certain USB Mice do not work with the IP Phone 2007. If the mouse does not transit information in the "Production", "Vendor" and "Manufacturing" fields of the USB communication exchange, the mouse will not be recognized by the IP Phone 2007. Note, that failure to send the above mentioned information is in violation of the USB communication exchange standard. Most leading brands of mice do send the required information.

Contrast Adjustments: Local & TPS contrast adjustments are not synchronized (IP Phone 1110, 1120E, 1140E and 1150E)

The IP Phone 1110, 1120E, 1140E and 1150E graphical display contrast control can be adjusted either locally (on the phone) or through the call server (TPS) control. The TPS does not yet synchronize its contrast setting with the local control. This means if the local control is used exclusively, then whenever the phone has a power cycle, the TPS contrast setting is restored and the user may need to adjust contrast again.

The local contrast control on the IP Phone 1110, 1120E, 1140E and 1150E is accessed by a "double press" of the Services key and selecting "1. Preferences", then "1. Display Settings" in the menu. The TPS contrast control is accessed with a "single press" of the Services key, then selecting "Telephone Options", then "Contrast Adjustment".

IP Phone Compatibility

These firmware releases are compatible with the following IP Phones:

PEC	Description	Firmware file
NTDU96AB70	IP Phone 2007 (Charcoal with Bezel) – Manufacture Discontinued	0621C4P.bin
NTDU96AC70E6	IP Phone 2007 (Charcoal with Bezel) (RoHS)	0621C4P.bin
NTYS02AAE6	IP Phone 1110 Graphite with Icon keycaps	0623C4I.bin
NTYS02BAE6	IP Phone 1110 Graphite with English keycaps	0623C4I.bin
NTYS03AA	IP Phone 1120E Graphite with Icon Keycaps – Manufacture Discontinued	0624C4I.bin
NTYS03BA	IP Phone 1120E Graphite with English keycaps – Manufacture Discontinued	0624C4I.bin
NTYS03AC	IP Phone 1120E Graphite with Icon Keycaps	0624C4I.bin
NTYS03BC	IP Phone 1120E Graphite with English keycaps	0624C4I.bin
NTYS03ABE6	IP Phone 1120E Graphite with Icon Keycaps (RoHS) – Manufacture Discontinued	0624C4I.bin
NTYS03BBE6	IP Phone 1120E Graphite with English Keycaps (RoHS) – Manufacture Discontinued	0624C4I.bin
NTYS03BBGSE6	IP Phone 1120E GSA (RoHS) – Manufacture Discontinued	0624C4I.bin
NTYS03ACE6	IP Phone 1120E Graphite with Icon Keycaps (RoHS)	0624C4I.bin
NTYS03BCE6	IP Phone 1120E Graphite with English keycaps (RoHS)	0624C4I.bin
NTYS03BCGSE6	IP Phone 1120E GSA (RoHS)	0624C4I.bin
NTYS05AA	IP Phone 1140E Graphite with Icon Keycaps – Manufacture Discontinued	0625C4I.bin
NTYS05BA	IP Phone 1140E Graphite with English keycaps – Manufacture Discontinued	0625C4I.bin
NTYS05AC	IP Phone 1140E Graphite with Icon Keycaps	0625C4I.bin
NTYS05BC	IP Phone 1140E Graphite with English keycaps	0625C4I.bin
NTYS05ABE6	IP Phone 1140E Graphite with Icon Keycaps (RoHS) – Manufacture Discontinued	0625C4I.bin
NTYS05BBE6	IP Phone 1140E Graphite with English Keycaps (RoHS) – Manufacture Discontinued	0625C4I.bin
NTYS05BBGSE6	IP Phone 1140E GSA (RoHS) – Manufacture Discontinued	0625C4I.bin
NTYS05ACE6	IP Phone 1140E Graphite with Icon Keycaps (RoHS)	0625C4I.bin
NTYS05BCE6	IP Phone 1140E Graphite with English Keycaps (RoHS)	0625C4I.bin
NTYS05BCGSE6	IP Phone 1140E GSA (RoHS)	0625C4I.bin

NTYS06AAE6	IP Phone 1150E Graphite with Icon Keycaps (RoHS)	0627C4I.bin
NTYS06BAE6	IP Phone 1150E Graphite with English Keycaps (RoHS)	0627C4I.bin

.

Call Server Compatibility and Requirements

These firmware releases are compatible with the below Nortel Call Server.

Call Server	Notes / Advisements
CS 2000 SN10 / CS 2100 SE10 - CICM 10.0 MR2 - CICM-EM 10.0 MR2	*Nortel recommends an upgrade to these firmware releases at the earliest opportunity.* The CICM-EM "Firmware Update" menu allows choosing minimum and recommended firmware levels for all supported IP Phones. Once initiated from the CICM-EM, the actual IP phone firmware upgrade is carried out directly through the CICM. For further details please refer to CICM Configuration, NTP NN10240-511 and CICM IP Phones Fundamentals, NTP NN10300-135.

System Compatibility and Requirements

System	Notes / Advisements
Nortel Application Gateway 1000 6.2 and Nortel Application Gateway 2000 6.2	*These firmware releases provide support to interwork with Nortel Application Gateway 1000 (AG1000) release 6.2 and Nortel Application Gateway 2000 (AG2000) release 6.2* The Nortel Application Gateway solution continues to deliver on IP Telephony's promise of convergence with important enhancements to the powerful packaged applications on the IP Phone's desktop, applications that are simply not possible to deliver with the traditional digital telephone. With the Nortel Application Gateway, IP Phone communication is truly transformed into a new feature-rich communications experience. For more information on the capabilities introduced with AG1000 and AG2000 please refer to the Product Bulletin **P-2008-0005-Global.** The IP Phone 1110 and 1150E are not supported by the AG1000 and the AG2000.

IP Phone Firmware Upgrade Method (Communication Server Dependent)

Communication Server 2000-2100 / Centrex IP Client Manager (CICM)

The IP Phone 2007, 1110, 1120E, 1140E and 1150E supports remote firmware upgrades through both a TFTP process and a more automated UFTP process direct from the CICM.

For more information on TFTP and UFTP firmware upgrade processes, please refer to CICM Configuration, NTP NN10240-511 and CICM IP Phones Fundamentals, NTP NN10300-135.

IP Phone Configuration Menu

The text-based configuration was expanded with the 0623C4D firmware release on the IP Phone 1110. The text-based menu structure below presents the complete configuration menu now available:

EAP Enable?[0-N,1-Y]:0
> *if "1"*
> **DeviceID[ ]**
> **Password:[*******]**

LLDP Enable? [0-N,1-Y]:1

DHCP? [0-N,1-Y]:1
> *if "0"*
> **SET IP: xxx.xxx.xxx.xxx**
> **NETMSK: xxx.xxx.xxx.xxx**
> **DEF GW: xxx.xxx.xxx.xxx**
> **S1 IP: xxx.xxx.xxx.xxx**
> **S1 PORT:**
> **S1 ACTION:**
> **S1 RETRY COUNT:**
> **S1 PK: FFFFFFFFFFFFFFFF**
> **S2 IP: xxx.xxx.xxx.xxx**
> **S2 PORT:**
> **S2 ACTION:**
> **S2 RETRY COUNT:**
> **S2 PK: FFFFFFFFFFFFFFFF**
> *else if "1"*
> **DHCP:0-Full,1-Partial:1**
> > *if "1"*
> > **S1 IP: xxx.xxx.xxx.xxx**
> > **S1 PORT:**
> > **S1 ACTION:**
> > **S1 RETRY COUNT:**
> > **S1 PK: FFFFFFFFFFFFFFFF**
> > **S2 IP: xxx.xxx.xxx.xxx**
> > **S2 PORT:**
> > **S2 ACTION:**
> > **S2 RETRY COUNT:**
> > **S2 PK: FFFFFFFFFFFFFFFF**

Speed[0-A,1-10,2-100]:0
> *if "1" or "2"*

Duplex[0-A,1-F,2-H]:0
Cfg XAS?[0-N, 1-Y]:1
    if "1"
    XAS IP: xxx.xxx.xxx.xxx
Voice 802.1Q[0-N,1-Y]:1
    if "1"
    VOICE VLAN?[0-N,1-Y]:0
        if "1"
        VLAN Cfg ?0-Auto,1-Man :1
            if "0"
            LLDP MED ? [0-N, 1-Y] :0
                if "0"
                LLDP VLAN ? [0-N,1-Y] :0
                    if "0"
                    DHCP ? [0-N, 1-Y] :0
            else if "1"
            VOICE VLAN ID :
        VLANFILTER ?[0-N,1-Y] :0
    Ctrl pBits[0-7,8-Au] :8
    Media pBits[0-7,8-Au] :8
PC Port ? [0-OFF,1-ON] :1 *This menu item, and submenus, are not applicable on IP Phone 2001*
    if "1"
    Speed[0-A,1-10,2-100]:0
        if "1" or "2"
        Duplex[0-A,1-F,2-H]:0
    Data 802.1Q[0-N,1-Y]:1
        if "1"
        DATA VLAN?[0-N,1-Y]:0
            if "1"
            DATA VLAN Cfg ?0-A,1-M :0
                if "1"
                DATA VLAN ID :
        Data pBits[0-7,8-Au] :8
        PCUntagAll ?[0-N,1-Y]:0
Cached IP? [0-N, 1-Y]:0
GARP Ignore?[0-N,1-Y]:0
PSK SRTP?[0-N, 1-Y]:1

The IP Phone 2007, 1120E, 1140E and 1150E configuration menu was expanded with the 0621C4J, 0624C4D, 0625C4D and 0627C4D firmware releases. The graphic menu structure below presents the complete configuration menu now available:

Enable 802.1x (EAP): []

    DeviceID:

    Password:

Enable 802.1ab (LLDP): []

DHCP: [No, Partial, Full]

    Set IP: xxx.xxx.xxx.xxx

    Net Mask: xxx.xxx.xxx.xxx

    Gateway: xxx.xxx.xxx.xxx

    S1 IP: xxx.xxx.xxx.xxx

    Port:

    S1 Action:

    Retry:

    S1 PK: FFFFFFFFFFFFFFFF

    S2 IP: xxx.xxx.xxx.xxx

    Port:

    S2 Action:

    Retry:

    S2 PK: FFFFFFFFFFFFFFFF

Ntwk Port Speed: [Auto, 10BT, 100BT]

    Ntwk Port Duplex: [Auto, Force Full, Force Half]

Disable Voice 802.1Q: []

    VoiceVLAN: [No VLAN, LLDP MED, LLDP VLAN Name, DHCP, Enter VLAN ID]

    VLAN Filter : []

    Ctrl Priority Bits: [Auto, 1, 2, 3, 4, 5, 6, 7]

    Media Priority Bits: [Auto, 1, 2, 3, 4, 5, 6, 7]

Disable PC Port: []

    PC Port Speed: [Auto, 10BT, 100BT]

        PC Port Duplex: [Auto, Force Full, Force Half]

    Disable Data 802.1Q: []

        DataVLAN: [No VLAN, LLDP VLAN Name, Enter VLAN ID]

        Data Priority Bits: [Auto, 1, 2, 3, 4, 5, 6, 7]

    PC-Port Untag All: []

Cached IP: []

Ignore GARP: []

Enable PSK SRTP: []

XAS IP: xxx.xxx.xxx.xxx

    Graphical XAS: []

    Port

TFTP IP: xxx.xxx.xxx.xxx

Enable Bluetooth: [Auto, yes, No]   *This menu item on IP Phone 1140E and 1150E only*

The IP Phone 2007, 1110, 1120E, 1140E and 1150E contain a password protection mechanism to lock out access to the Network Configuration menu. If **enabled**, access to the Network Configuration menu is password protected and the password is prompted by a pop up window. One must type the password 26567*738 (color*set) from the dial pad and press the center of the navigation cluster (enter key) to enter the Network Configuration menu.

When an incorrect password is entered, the Network Configuration Menu is not opened.

To thwart password guessing, only 3 incorrect password entries in a row are allowed. After the 3rd incorrect entry, the password entry is ignored for 5 minutes.   During this period of time, the password prompt is displayed and the entered digits accepted; however, the phone will not process the incoming digits. The password prompt window simply closes and the behavior is identical to that of an incorrect password entry. The user will assume the incorrect password has been entered and try again. Thus even if the correct password is guessed during the 5 minute period, it will be ignored. This effectively reduces the guess entry rate to 3 guesses every 5 minutes.

Once the password has been entered, access to the Network Configuration menu remains active for 5 minutes. During the 5 minutes, the menu can be freely navigated, exited and entered without being prompted again for the password. When the 5 minutes expires, the menu is closed. The password must be reentered to access the Menu.

*Nortel, the Nortel logo and the Globemark are trademarks of Nortel.

Nortel is a recognized leader in delivering communications capabilities that enhance the human experience, ignite and power global commerce, and secure and protect the world's most critical information. Serving both service provider and enterprise customers, Nortel delivers innovative technology solutions encompassing end-to-end broadband, Voice over IP, multimedia services and applications, and wireless broadband designed to help people solve the world's greatest challenges. Nortel does business in more than 150 countries. For more information, visit Nortel on the Web at www.nortel.com.